CHAPTER V
CONCLUSION AND SUGGESTIONS

This section is divided into two subsections. The first section conveys the conclusion of the present research based on the findings and discussion provided in the previous chapter. Moreover, the other section of this chapter presents several suggestions for further studies.

5.1 Conclusion

By using multimodal analysis, the present research investigated the use of images and the captions accompanying them in Chemistry textbook used by IPSE students. The research aims to find out the types of images and types of processes used in the images presented in the textbook. Additionally, the present research also seeks to discover the ideational relation between the visual and verbal modes in the textbook. The analysis of the present research is conducted based on the theory of reading images proposed by Kress and Van Leeuwen (2006) and Halliday's Systemic Functional Grammar (1994).

The research found that, in terms of the types of images used, the textbook dominantly used realistic image, the one that represents reality according to human viewpoint (Dimopolous, et.al., 2003). The use of realistic images in the textbook can be more effective in capturing the leaners' attention. Therefore, it can be assumed that the use of realistic image in delivering scientific concept deemed to be relevant with the aim to familiarize the learners with the abstract and complex scientific concept.

Meanwhile, in terms of types of processes, the most frequent process used in the textbook is analytical process, the one that represents the relation between the participants in terms of a part-whole structure (Kress & Van Leeuwen, 2006). The use of analytical process allows the learners to analyze the structure of chemical elements, chemical phenomenon, and chemical processes that is being presented in the image. Thus, by analyzing the image, the learners could increase their understanding towards the materials that is being delivered.

Besides types of images and types of processes of images, the captions of the images were also analyzed based on Halliday's (1994) Functional Grammar. By using transitivity analysis, the research found out that *material process*; the process of doing, acting, happening, or creating, *relational process*; the process that involves state of being (including having); and *mental process*; the process that deals with the meaning of sensing (Gerot & Wignell, 1995) appeared in the captions of the images in the textbook. However, *material process* and *relational process* are the most frequent processes used in the captions. Dominantly, *material process* is used to show what happens to and what is done by the chemical objects, also to describe the chemical experiment presented in the images. Meanwhile, *relational process* used in the captions of the images to give explanation to the learners about the structure of the chemical elements presented in the images.

Finally, by looking at the ideational relation between the two modes, the research found that there is a pattern formed by the visual and verbal modes in the Chemistry textbook. The captions as the verbal mode are presented below the images as the visual mode. It can be seen that the captions support the concept of the scientific material presented in the images. Moreover, the pattern also shows that there is repetition between the two semiotic modes in the textbook. The captions presented below the images restates the concept of chemistry depicted in the images.

By looking at the findings above, it can be concluded that the Chemistry textbook used by the students at IPSE UPI use the combination of visual and verbal modes to provide clearer depiction about the concept of chemistry to the learners. Moreover, the repetition patterns formed by the visual and the verbal modes in the textbook that complement each other is relevant to make the delivery of scientific concept easier for the learners. It can facilitate the learners to recognize the scientific ideas presented in the images and understand the brief explanation provided in the captions accompanying the images at the same time.

In other words, it can be said that the images presented in science textbook not only serves to attract the learners' attention, but also to give the learners be able to get better comprehension about the abstract scientific concept.

5.2 Suggestion

There are several suggestions for the use of the research also for the advancement of further research.

First, for the next researchers, since the present research only analyze the ideational relation between the images and the captions accompanying them in English-based science textbook used by Indonesian students, the next researchers should explore the ideational relation between the visual and verbal modes by looking at the images and the passages provided in the science textbook. Moreover, the next researchers can also analyze the ideational relation between the visual and verbal modes used in science textbook for another subjects, such as Biology, Math, and Physics.

Second, for the textbook writers, the findings of the research can be used as a reference to help them to present the effective way in describing the abstract scientific concept by using the configuration of visual and verbal semiotic modes.

Finally, for the society in general, and also for those who learn science in specific, the result of the research can be used as the additional information to understand the meaning of images presented in science textbook.